Rubber compensator ▪ Type A-1

Universal compensator DN 20 – DN 1000

DN 20 - DN 400

DN 450 - DN 1000

Structure type A-1

Universal compensator, consisting of a rubber bellows with rotating flanges

Rubber bellows PN 16

- ☐ Highly elastic molded bellows in various rubber grades
- ☐ Synthetic fibre reinforcement
- ☐ Wire-reinforced self-sealing rubber rim
- ☐ Electrical impedance 10^3 to 10^6 Ohm (DIN IEC 93, VDE 0303-30)

Rubber grade*	Colour code	Possible uses
EPDM	**orange**	**Hot water, acids, lyes**
NBR	**red**	**Oil**
CIIR	**white**	**Drinking water**

*Check or inquire about the resistance of the rubber grade to temperature and medium

Technical design	
Max. perm. operating pressure	**16 bar***
Max. perm. temperature	**+100 °C**
Bursting pressure	≥ **48 bar**
Vacuum	≥ **0.05 bar abs. with vacuum supporting ring** (from DN 65)

Max. operating pressure to be set 30 % lower for shock loads.
*Please consider a decrease of pressure due to temperature (see technical annex).

Flanges

Version

- ☐ Rotating flanges with stabilizing collar
- ☐ Flange drilling for through bolts
- ☐ Special turned groove for rubber rim

Dimensions

Standard: DN 20 - DN 175 (PN 16)
DN 200 - DN 1000 (PN 10)
DN 20 - DN 400 (PN 6)
according to EN 1092

Others: DIN EN, ANSI, BS etc.

Connection dimensions see technical annex

Materials

Standard: 1.0038 (S235JR)

Others: 1.4541, 1.4571, plastic (PP), aluminum, etc.

Corrosion protection

Standard: DN 20 - DN 400 electrogalvanized
DN 450 - DN 1000 hot-dip galvanized

Others: special varnish, special coating, etc.

Applications

- ■ **for reducing thermal and mechanical tension in pipes and their system components, e.g.**
  - ■ **pumps**
  - ■ **compressors**
  - ■ **motors**
- ■ **for absorbing vibration and noise**
- ■ **for compensating axial, lateral and angular movement**
- ■ **for compensating simultaneous movement in cooling water pipes**
- ■ **to compensate for installation inaccuracies**
- ■ **as installation and dismantling aid**

Accessories

- ☐ Vacuum supporting ring
- ☐ Internal guide sleeve
- ☐ Flame-proof protective cover
- ☐ Protective hood
- ☐ Protective tube

Certificates

- ☐ CE (DGR 97/23/EG)
- ☐ Bureau Veritas
- ☐ Det Norske Veritas
- ☐ Lloyd´s Register of Shipping
- ☐ kiwa - ATA
- ☐ gem. KTW 1.3.13
- ☐ crecep
- ☐ TÜV Süddeutschland (KTA)

Others see technical annex

STENFLEX type A-1 used at pumps

Dimensions standard program

DN	BL* mm	Pressure rate bar	ø di Bellows inner ø mm	ø C Raised face outer ø mm	ø E Raised face inner ø mm	ø W Convolution ø unpressurized mm	PN Flange connection EN 1092	ø D Flange outer ø mm	b Flange thickness mm
20	100	16	22±3	51	30	55	16	115	16
25	100	16	22±3	51	30	55	16	115	16
32	125	16	31±3	72	39	78	16	140	16
40	125	16	39±3	81	45	86	16	150	16
50	125	16	49±3	95	56	97	16	165	16
65	125	16	65±3	115	72	113	16	185	18
80	150	16	77±3	127	84	135	16	200	20
100	150	16	100±3	151	109	160	16	220	20
125	150	16	127±3	178	133	184	16	250	22
150	150	16	153±3	206	161	212	16	285	22
175	150	16	176±3	230	185	236	16	315	22
200	175	10	202±3	260	209	265	10	340	25
250	175	10	252±3	313	262	318	10	395	25
300	200	10	303±3	363	312	373	10	445	25
350	200	10	344±3	422	360	420	10	505	30
400	200	10	396±3	472	410	460	10	565	30
450	250	10	435±8	532	450	575	10	615	35
500	250	10	485±8	584	500	625	10	670	35
600	250	10	585±8	684	600	725	10	780	40
700	275	10	690±10	800	700	850	10	895	40
800	275	10	790±10	900	800	950	10	1015	40
900	300	10	890±10	1008	900	1050	10	1115	40
1000	300	10	990±10	1108	1000	1150	10	1230	40

*DN 25 to DN 300 also available in BL 130 mm as type R
From DN 200 pressure rate 16 bar also available with flanges PN 16

Movement compensation/bellows cross sectional area

DN	Δ ax Axial movement Compression - mm	Elongation + mm	Δ lat Lateral movement ± mm	Δ ang* Angular movement ± ∢ degrees*	A** Effective bellows cross sectional area at 16 bar cm²	Weight approx. kg
20	20	10	10	25	0	2.3
25	20	10	10	25	0	2.3
32	35	10	15	25	1	3.3
40	35	10	15	25	6	3.7
50	35	10	15	25	12	4.4
65	35	10	15	25	23	5.2
80	40	10	15	20	42	7.2
100	40	10	15	15	68	8.0
125	40	10	15	15	92	10.7
150	40	10	15	12	173	13.0
175	40	10	15	10	247	15.6
200	45	15	15	8	264	18.6
250	45	15	15	7	503	24.2
300	45	15	15	6	550	30.2
350	45	15	15	5	990	40.1
400	45	15	15	5	1100	48.8
450	50	30	30	8	1706	64.0
500	50	30	30	7	2013	72.0
600	50	30	30	6	3006	90.0
700	50	30	30	5	4250	120.0
800	50	30	30	5	5440	155.0
900	50	30	30	4	7000	170.0
1000	50	30	30	3,5	8544	205.0

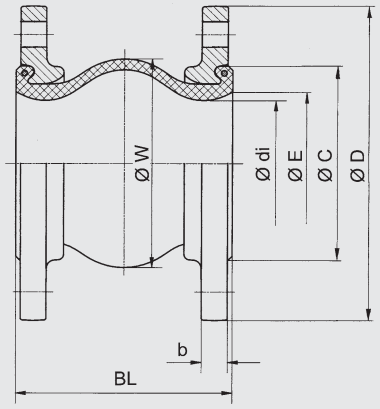
*Larger Δ D ang possible for compressed installation length.
Please inquire for simultaneous (different) movement.
**Effective bellows cross sectional area is a theoretical value.

Note

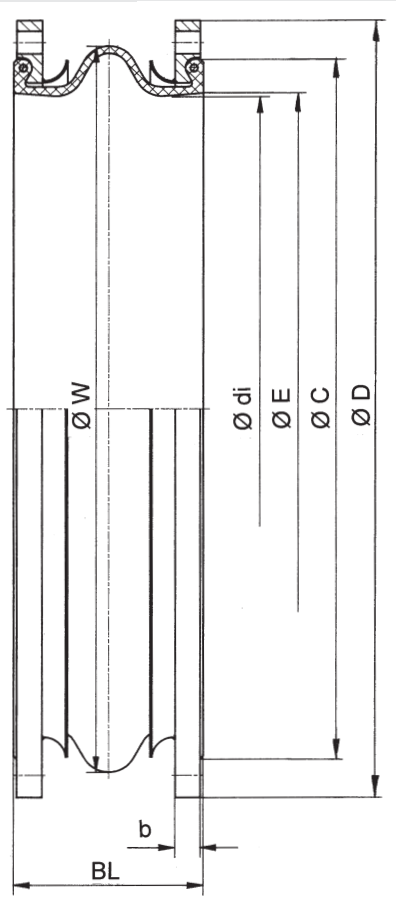
Please comply with the general technical instructions regarding reaction force, moving force, fixed point load, installation instructions etc.

Subject to technical alterations and deviations resulting from the manufacturing process.

Versions



DN 20 - DN 400



DN 450 - DN 1000

Type A-1
Universal compensator, without restraint